		Exploring Aerona	nutics		
2006 Mathematics					
Grade Level and Grade Span Expectations					
<b>Rhode Island Mathem</b>	atics				
Grade 5					
Activity/Lesson	State	Standards			
Fundamentals of Aeronautics (145-176)	RI	MA.5.M(DSP)-5- 3a	Organizes and displays data using tables, bar graphs, or line graphs to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.		
Fundamentals of Aeronautics (145-176)	RI	MA.5.M(DSP)-5-	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested, and when appropriate makes predictions; and asks new questions and makes connections to real world situations.		
Tools of Aeronautics(257-326)	RI	MA.5.M(G&M)-5	Demonstrates conceptual understanding of similarity by describing the proportional effect on the linear dimensions of triangles and rectangles when scaling up or down while preserving angle measures, or by solving related problems (including applying scales on maps). Describes effects using models or explanations.		
The Tools of Aeronautics	RI	MA.5.M(G&M)-5-5	Demonstrates conceptual understanding of similarity by describing the proportional effect on the linear dimensions of triangles and rectangles when scaling up or down while preserving angle measures, or by solving related problems (including applying scales on maps). Describes effects using models or explanations.  Demonstrates understanding of the relative magnitude of numbers by ordering, comparing,		
The Resource Center	RI	MA.5.M(N&O)-5-	or identifying equivalent positive fractional numbers, decimals, or benchmark percents within number formats (fractions to fractions, decimals to decimals, or percents to percents); or integers in context using models or number lines.		

			In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested, and when appropriate makes
		MA 5 M(DSP)-5-	predictions; and asks new questions and makes
Science of Flight	RI	6	connections to real world situations.
Ocience of Flight	T VI	0	Demonstrates conceptual understanding of
			mathematical operations by describing or
			illustrating the meaning of a remainder with
Intograting with		MA E MANISON E	
Integrating with	DI	, , ,	respect to division of whole numbers using
Aeronautics	RI	3b	models, explanations, or solving problems.
			Demonstrates conceptual understanding of
			algebraic expressions by using letters to
			represent unknown quantities to write linear
		NAA	algebraic expressions involving any two of the
Integrating with		` '	four operations; or by evaluating linear algebraic
Aeronautics	RI	3	expressions using whole numbers.
			Organizes and displays data using tables, bar
			graphs, or line graphs to answer questions
			related to the data, to analyze the data to
Scientific Method(124-			formulate or justify conclusions, to make
144)	RI	3a	predictions, or to solve problems.
			In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested, and when appropriate makes
Scientific Method(124-		MA.5.M(DSP)-5-	predictions; and asks new questions and makes
144)	RI	6	connections to real world situations.
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	1	Exploring Aerona	nutics
		2006 Mathemat	
	Grade Lev	el and Grade Spa	n Expectations
<b>Rhode Island Mathem</b>	atics	·	
Grade 6			
Activity/Lesson	State	Standards	
			Interprets a given representation (circle graphs,
			line graphs, or stem-and-leaf plots) to answer
			questions related to the data, to analyze the
Fundamentals of		MA.6.M(DSP)-6-	1 '
Aeronautics (145-176)	RI	1	predictions, or to solve problems.
	I.	1	i

			Analysis waterman towards on distributions to the
			Analyzes patterns, trends or distributions in data
			in a variety of contexts by determining or using
			measures of central tendency (mean, median, or
Fundamentals of		MA.6.M(DSP)-6-	mode) or dispersion (range) to analyze
Aeronautics (145-176)	RI	2	situations, or to solve problems.
			In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested, and when appropriate makes
Fundamentals of		MA 6 M(DSP)-6-	predictions; and asks new questions and makes
Aeronautics (145-176)	RI	6	connections to real world situations.
7101011441100 (110 170)	1 (1		For a probability event in which the sample
			space may or may not contain equally likely
			outcomes, predicts the theoretical probability of
			an event and tests the prediction through
The Tools of		MA 6 M/DSD) 6	experiments and simulations; and designs fair
	RI	1 '	
Aeronautics	KI	5a	games.
			For a probability event in which the sample
			space may or may not contain equally likely
			outcomes, predicts the theoretical probability of
			an event and tests the prediction through
		1 '	experiments and simulations; and designs fair
Science of Flight	RI	5a	games.
			Makes estimates in a given situation by
			identifying when estimation is appropriate,
			selecting the appropriate method of estimation,
			determining the level of accuracy needed given
			the situation, analyzing the effect of the
			estimation method on the accuracy of results,
			and evaluating the reasonableness of solutions
Integrating with		MA.6.M(N&O)-6-	appropriate to grade level GLEs across content
Aeronautics	RI	7	strands.
			Measures and uses units of measures
			appropriately and consistently, and makes
Integrating with		MA.6.M(G&M)-6-	conversions within systems when solving
Aeronautics	RI	7	problems across the content strands.
			In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
Indus to Assess setter		MA C MADOD) C	being tested, and when appropriate makes
Intro to Aeronautics	DI	MA.6.M(DSP)-6-	
(109-123)	RI	6	connections to real world situations.

Scientific Method(124-144)  Scientific Method(124-144)  RI	1 2	MA.6.M(DSP)-6- 2	Analyzes patterns, trends or distributions in data in a variety of contexts by determining or using measures of central tendency (mean, median, or mode) or dispersion (range) to analyze situations, or to solve problems.  Organizes and displays data using tables, line graphs, or stem-and-leaf plots to answer
Scientific Method(124-	1 2	MA.6.M(DSP)-6- 2	measures of central tendency (mean, median, or mode) or dispersion (range) to analyze situations, or to solve problems.  Organizes and displays data using tables, line
Scientific Method(124-	1 2	MA.6.M(DSP)-6- 2	measures of central tendency (mean, median, or mode) or dispersion (range) to analyze situations, or to solve problems.  Organizes and displays data using tables, line
Scientific Method(124-	1 2	MA.6.M(DSP)-6- 2	mode) or dispersion (range) to analyze situations, or to solve problems.  Organizes and displays data using tables, line
Scientific Method(124-	1 2	2	situations, or to solve problems.  Organizes and displays data using tables, line
Scientific Method(124-			Organizes and displays data using tables, line
`			
`	ı		graphs, or stem-and-leaf plots to answer
`	l.		
`			questions related to the data, to analyze the
,			data to formulate or justify conclusions, to make
THE TOTAL PROPERTY OF THE PROP			predictions, or to solve problems.
			For a probability event in which the sample
			space may or may not contain equally likely
			outcomes, predicts the theoretical probability of
			an event and tests the prediction through
Scientific Method(124-		MA.6.M(DSP)-6-	experiments and simulations; and designs fair
144) RI		, ,	games.
1,			In response to a teacher or student generated
			question or hypothesis decides the most
			l ·
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested, and when appropriate makes
Scientific Method(124-		` ,	predictions; and asks new questions and makes
144) RI		6	connections to real world situations.
	E:	xploring Aerona	utics
	Crada Lava		
<u></u>		and Grade Spa	n expectations
	ics		
Activity/Lesson Sta	tate	Standards	
			Applies concepts of similarity by solving
			problems involving scaling up or down and their
			impact on angle measures, linear dimensions
			and areas of polygons, and circles when the
			linear dimensions are multiplied by a constant
Fundamentals of		MA.7.M(G&M)-7-	factor. Describes effects using models or
Agrapautica (145 176) DI			explanations.
Aeronaulius (145-176) Ri			Identifies and extends to specific cases a variety
Aeronautics (145-176) RI			
Aeronautics (145-176) Ri			of patterns (linear and nonlinear) represented in
Aeronaulics (145-176) Ri			landada Antalan andaran a
Aeronautics (145-176) Ri			models, tables, sequences, graphs, or in
Aeronautics (145-176) Ri			models, tables, sequences, graphs, or in problem situations; and generalizes a linear
Aeronautics (145-176) Ri			problem situations; and generalizes a linear
Aeronautics (145-176) Ri			problem situations; and generalizes a linear relationship using words and symbols;
Aeronautics (145-176) Ri			problem situations; and generalizes a linear relationship using words and symbols; generalizes a linear relationship to find a specific
			problem situations; and generalizes a linear relationship using words and symbols; generalizes a linear relationship to find a specific case; or writes an expression or equation using
Fundamentals of Aeronautics (145-176) RI		MA.7.M(F&A)-7-	problem situations; and generalizes a linear relationship using words and symbols; generalizes a linear relationship to find a specific
Rhode Island Mathematic	Grade Level	xploring Aerona 2006 Mathemati I and Grade Spa Standards	utics

			In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested while considering the limitations
			that could affect interpretations; and when
C. un de un a untala af		NAA 7 NA(DOD) 7	appropriate makes predictions; and asks new
Fundamentals of	DI	\ '	questions and makes connections to real world
Aeronautics (145-176)	RI	6	situations.
			Demonstrates conceptual understanding of
			spatial reasoning and visualization by sketching
			three-dimensional solids; and draws nets of
			rectangular and triangular prisms, cylinders, and
			pyramids and uses the nets as a technique for
Wings(177-208)	RI	10	finding surface area.
			Applies concepts of similarity by solving
			problems involving scaling up or down and their
			impact on angle measures, linear dimensions
			and areas of polygons, and circles when the
			linear dimensions are multiplied by a constant
Airplane Control(209-		MA.7.M(G&M)-7-	factor. Describes effects using models or
256)	RI	5	explanations.
			For a probability event in which the sample
			space may or may not contain equally likely
			outcomes, predicts the theoretical probability of
			an event and tests the prediction through
			experiments and simulations; and compares and
The Tools of		MA.7.M(DSP)-7-	contrasts theoretical and experimental
Aeronautics	RI	5a	probabilities.
			In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested while considering the limitations
			that could affect interpretations; and when
			appropriate makes predictions; and asks new
		MA 7 M(DSP)-7-	questions and makes connections to real world
Science of Flight	RI	6	situations.
Colonico of Filight	[1 XI	J O	oituutioi io.

			Identifies and extends to specific cases a variety
			of patterns (linear and nonlinear) represented in
			models, tables, sequences, graphs, or in
			problem situations; and generalizes a linear
			relationship using words and symbols;
			generalizes a linear relationship to find a specific
			case; or writes an expression or equation using
Integrating with		MA.7.M(F&A)-7-	words or symbols to express the generalization
Aeronautics	RI	1	of a nonlinear relationship.
referractios	1 (1	•	Demonstrates conceptual understanding of
			linear relationships (y = kx; y = mx + b) as a
			constant rate of change by solving problems
			involving the relationship between slope and
			rate of change, by describing the meaning of
			slope in concrete situations, or informally
			determining the slope of a line from a table or
			graph; and distinguishes between constant and
			varying rates of change in concrete situations
			represented in tables or graphs; or describes
			how change in the value of one variable relates
			to change in the value of a second variable in
Integrating with		MA.7.M(F&A)-7-	problem situations with constant rates of
Aeronautics	RI	2	change.
			Interprets a given representation (circle graphs,
			scatter plots that represent discrete linear
			relationships, or histograms) to analyze the data
Integrating with		MA.7.M(DSP)-7-	to formulate or justify conclusions, to make
Aeronautics	RI	1	predictions, or to solve problems.
- 101011010100			Interprets a given representation (circle graphs,
			scatter plots that represent discrete linear
			relationships, or histograms) to analyze the data
Intro to Aeronautics		MA 7 M(DSP)-7-	to formulate or justify conclusions, to make
(109-123)	RI	1	predictions, or to solve problems.
(103-123)	IXI	1	In response to a teacher or student generated
			question or hypothesis decides the most
			effective method (e.g., survey, observation,
			experimentation) to collect the data (numerical
			or categorical) necessary to answer the
			question; collects, organizes, and appropriately
			displays the data; analyzes the data to draw
			conclusions about the question or hypothesis
			being tested while considering the limitations
			that could affect interpretations; and when
			appropriate makes predictions; and asks new
Intro to Aeronautics		MA.7.M(DSP)-7-	questions and makes connections to real world
(109-123)	RI	6	situations.
			Interprets a given representation (circle graphs,
			scatter plots that represent discrete linear
			relationships, or histograms) to analyze the data
Scientific Method(124-		MA.7.M(DSP)-7-	to formulate or justify conclusions, to make
144)	RI	1	predictions, or to solve problems.

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Scientific Method(124-144)	RI	MA.7.M(DSP)-7- 3a	Organizes and displays data using tables, line graphs, scatter plots, and circle graphs to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
Scientific Method(124-144)	RI	MA.7.M(DSP)-7- 6	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world situations.
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	<b>t</b>	xploring Aerona	
	Oue de Levie	2006 Mathemat	
Rhode Island Mathem		l and Grade Spa	In Expectations
Grade 8	iatics		
Activity/Lesson	State	Standards	
ACIIVILY/LESSOII	State	Stanuarus	In response to a teacher or student generated
Fundamentals of Aeronautics (145-176)	RI	MA.8.M(DSP)-8-	question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world situations.
Wings(177-208)	RI	MA.8.M(G&M)-8-	Applies concepts of similarity to determine the impact of scaling on the volume or surface area of three-dimensional figures when linear dimensions are multiplied by a constant factor; to determine the length of sides of similar triangles, or to solve problems involving growth and rate.
		5	LONG FORC

The Tools of Aeronautics	RI	MA.8.M(DSP)-8-	For a probability event in which the sample space may or may not contain equally likely outcomes, determines the experimental or theoretical probability of an event in a problem-solving situation; and predicts the theoretical probability of an event and tests the prediction through experiments and simulations; and compares and contrasts theoretical and experimental probabilities.
The Resource Center	RI	MA.8.M(N&O)-8-	Demonstrates understanding of the relative magnitude of numbers by ordering or comparing rational numbers, common irrational numbers (e.g., "square root" of 2, pi), numbers with whole number or fractional bases and whole number exponents, square roots, absolute values, integers, or numbers represented in scientific notation using number lines or equality and inequality symbols.
Science of Flight	RI		In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world situations.
Integrating with Aeronautics	RI	MA.8.M(F&A)-8- 1	Identifies and extends to specific cases a variety of patterns (linear and nonlinear) represented in models, tables, sequences, graphs, or in problem situations; and generalizes a linear relationship (non-recursive explicit equation); generalizes a linear relationship to find a specific case; generalizes a nonlinear relationship using words or symbols; or generalizes a common nonlinear relationship to find a specific case.

Intro to Aeronautics		, ,	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world
(109-123)	RI	6	situations.
Scientific Method(124-144)	RI	MA.8.M(DSP)-8-	Interprets a given representation (line graphs, scatter plots, histograms, or box-and-whisker plots) to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
Scientific Method(124-		MA.8.M(DSP)-8-	In response to a teacher or student generated question or hypothesis decides the most effective method (e.g., survey, observation, experimentation) to collect the data (numerical or categorical) necessary to answer the question; collects, organizes, and appropriately displays the data; analyzes the data to draw conclusions about the question or hypothesis being tested while considering the limitations that could affect interpretations; and when appropriate makes predictions; and asks new questions and makes connections to real world
144)	RI	6	situations.